

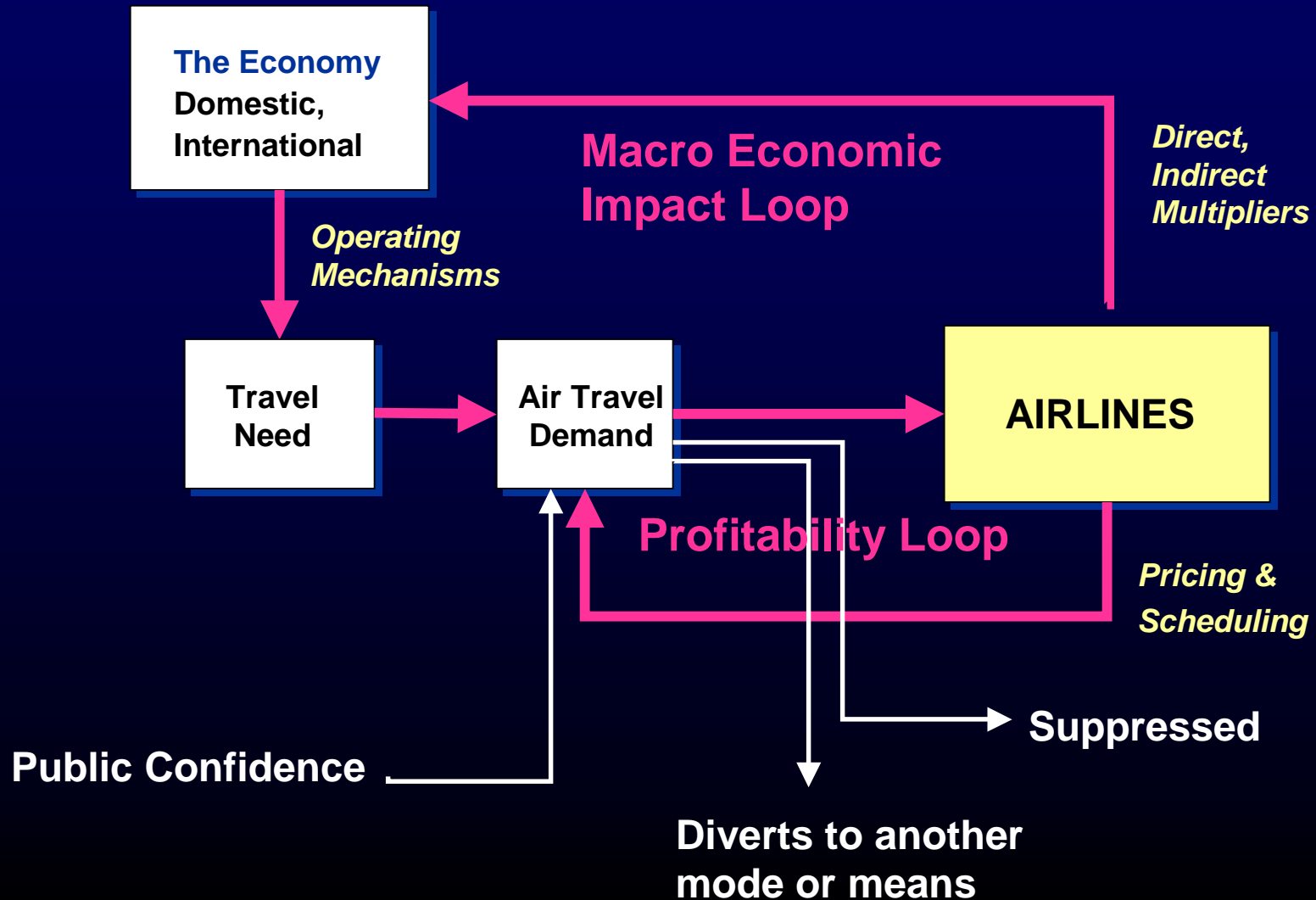
# Economic Impact of September 11



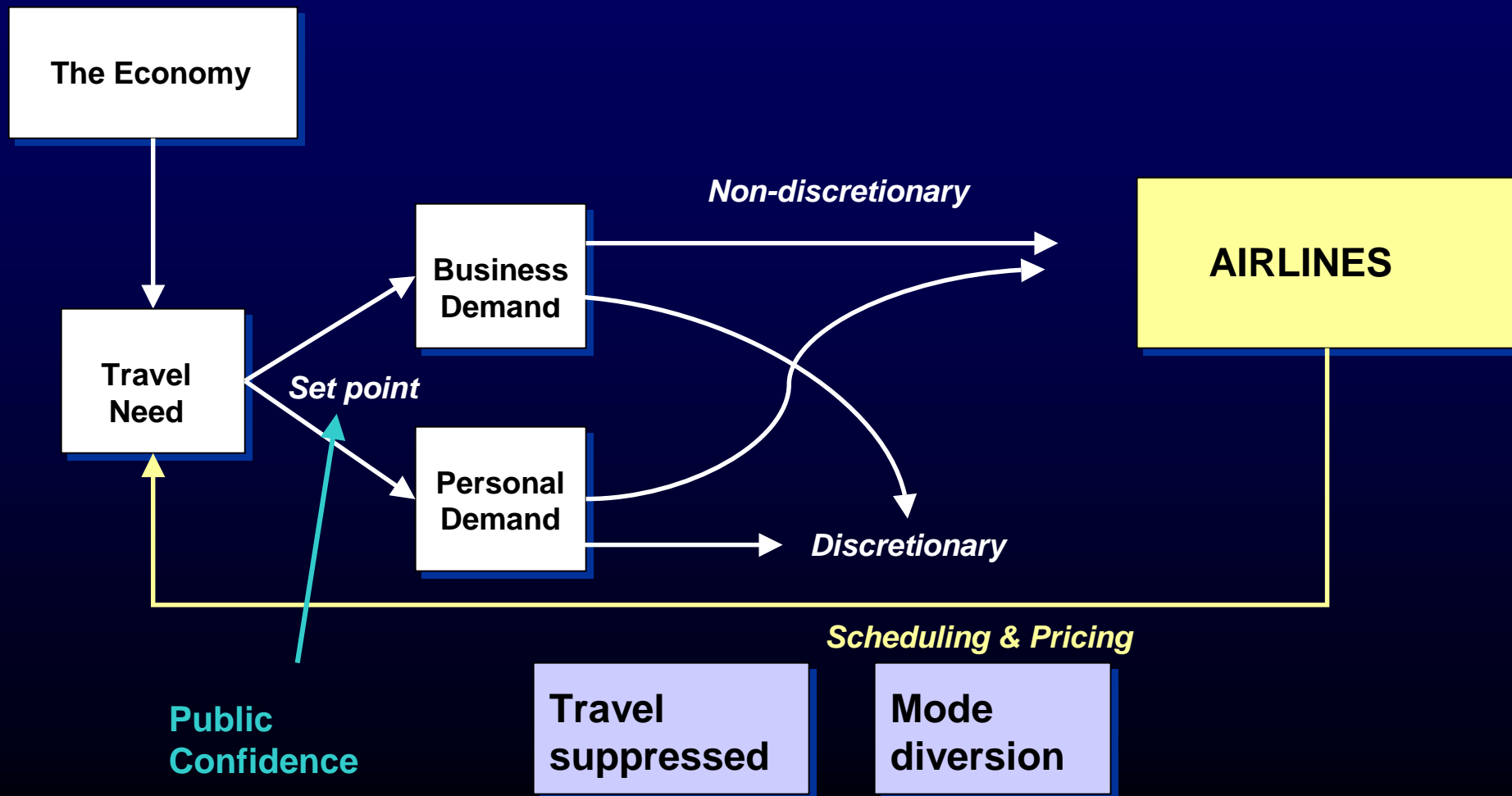
Prof. R John Hansman  
Prof. John-Paul Clarke  
Ryan Tam  
Bruno Miller  
Victor Rivas

# **ETMS Movie of the Shut Down of Air Traffic Over the United States on Sept 11, 2001**

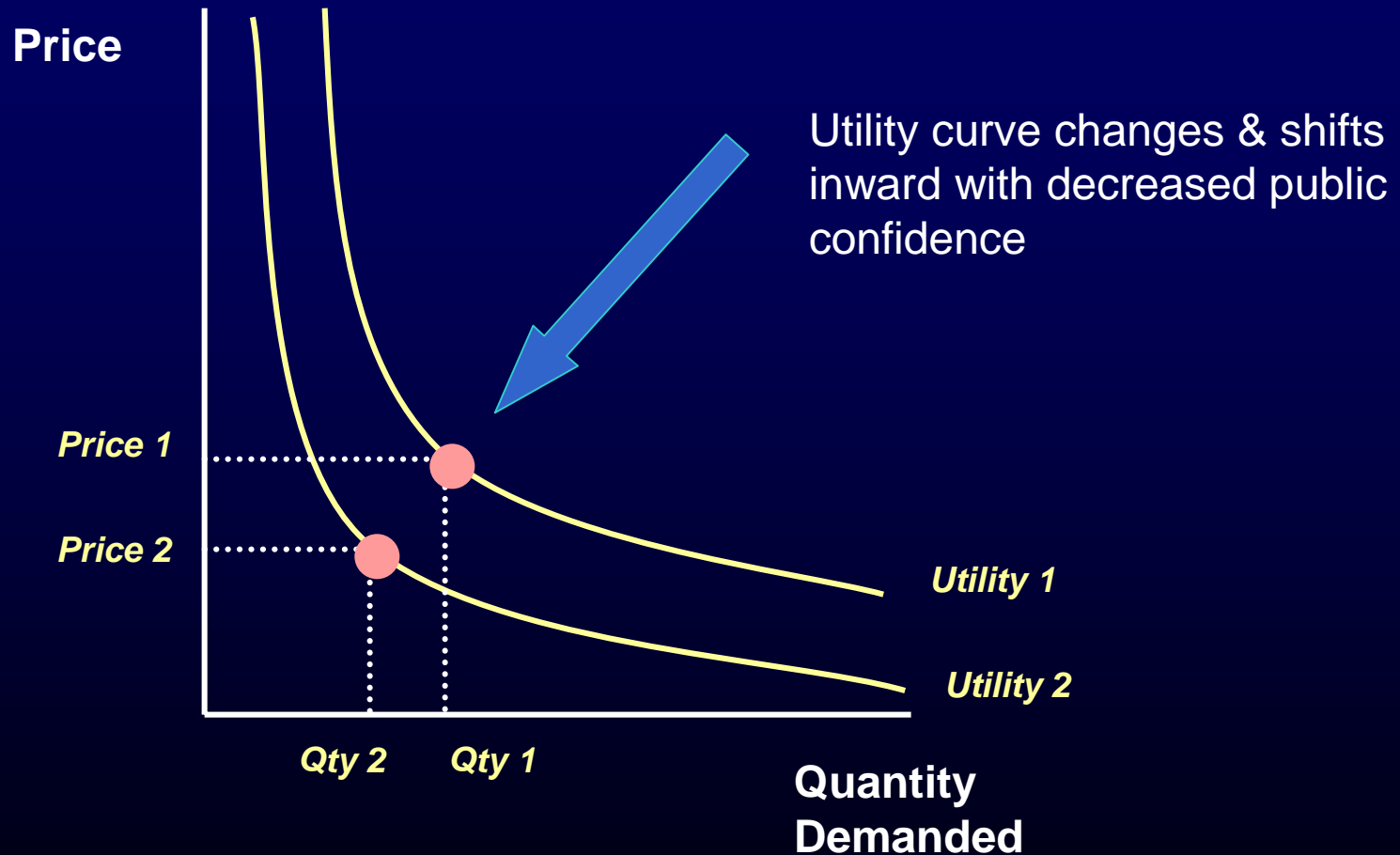
# Conceptual Structure



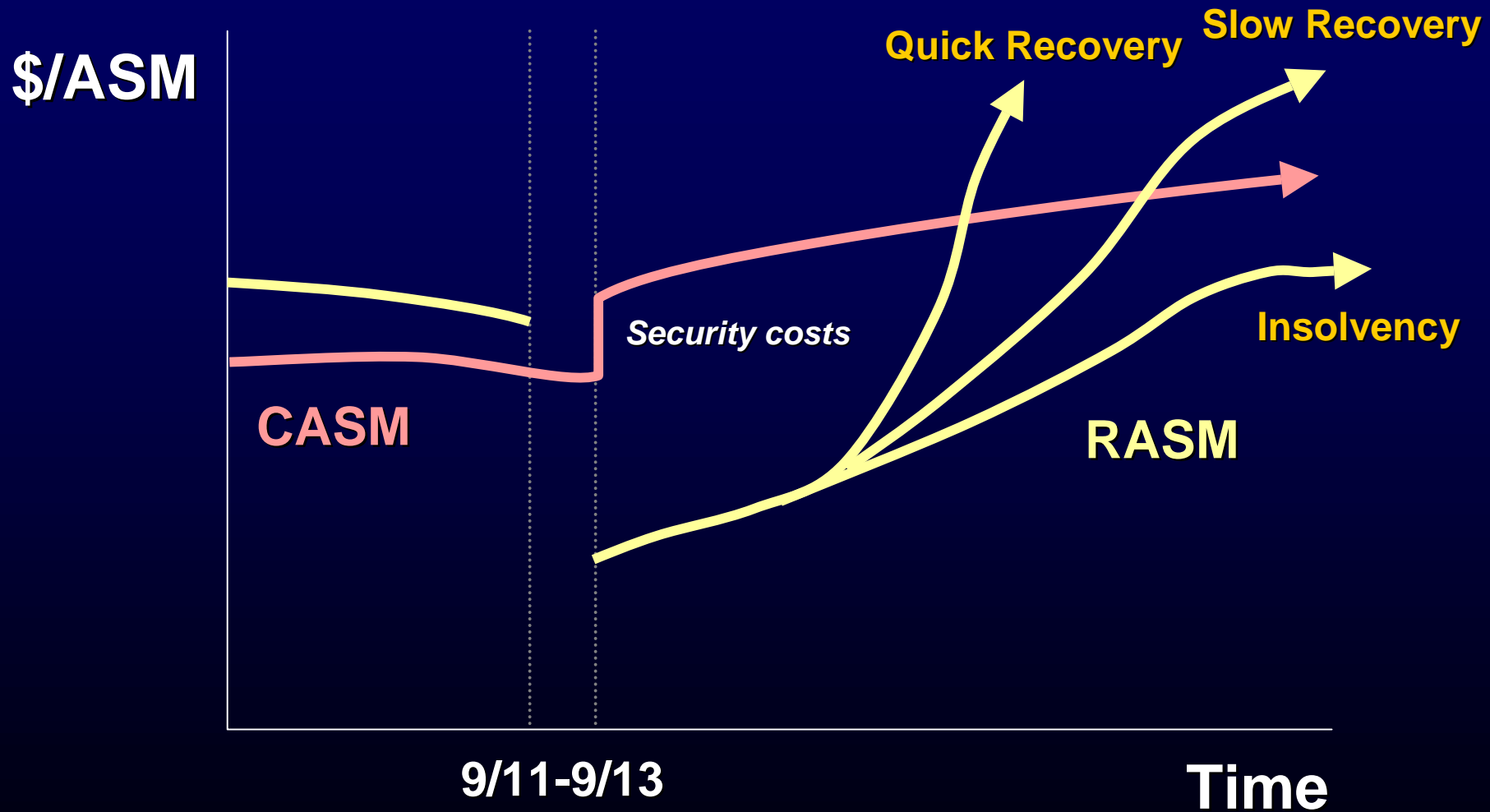
# Impact of Public Confidence on Profitability Loop



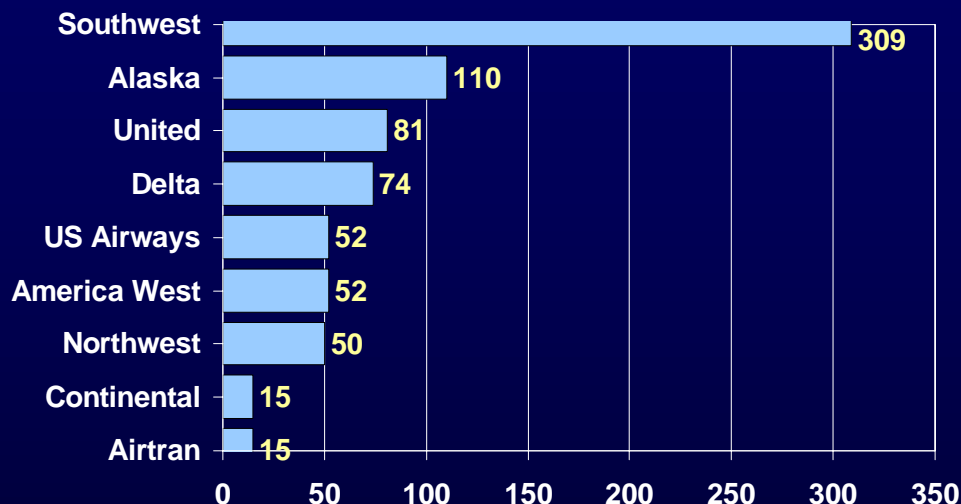
# Demand Function



# Airline Profitability Impact

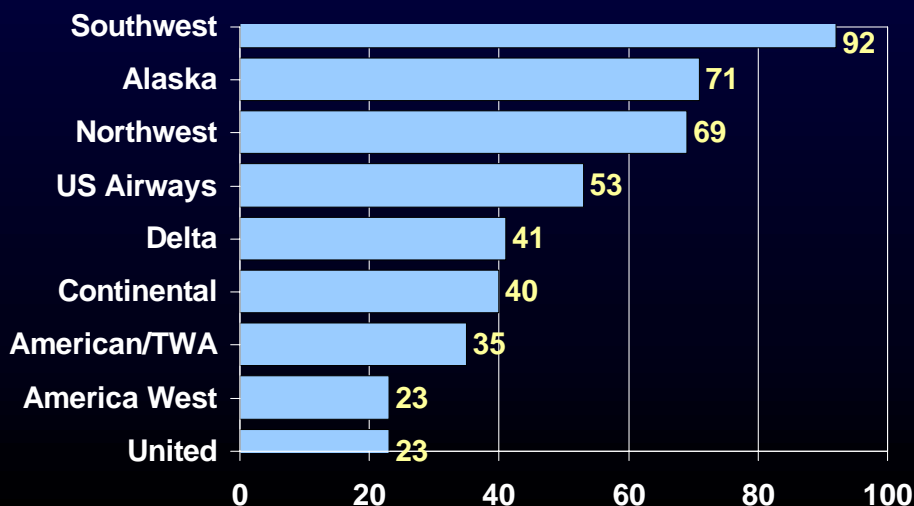


# Estimates of Days of Cash Available



Days from 9/17/01

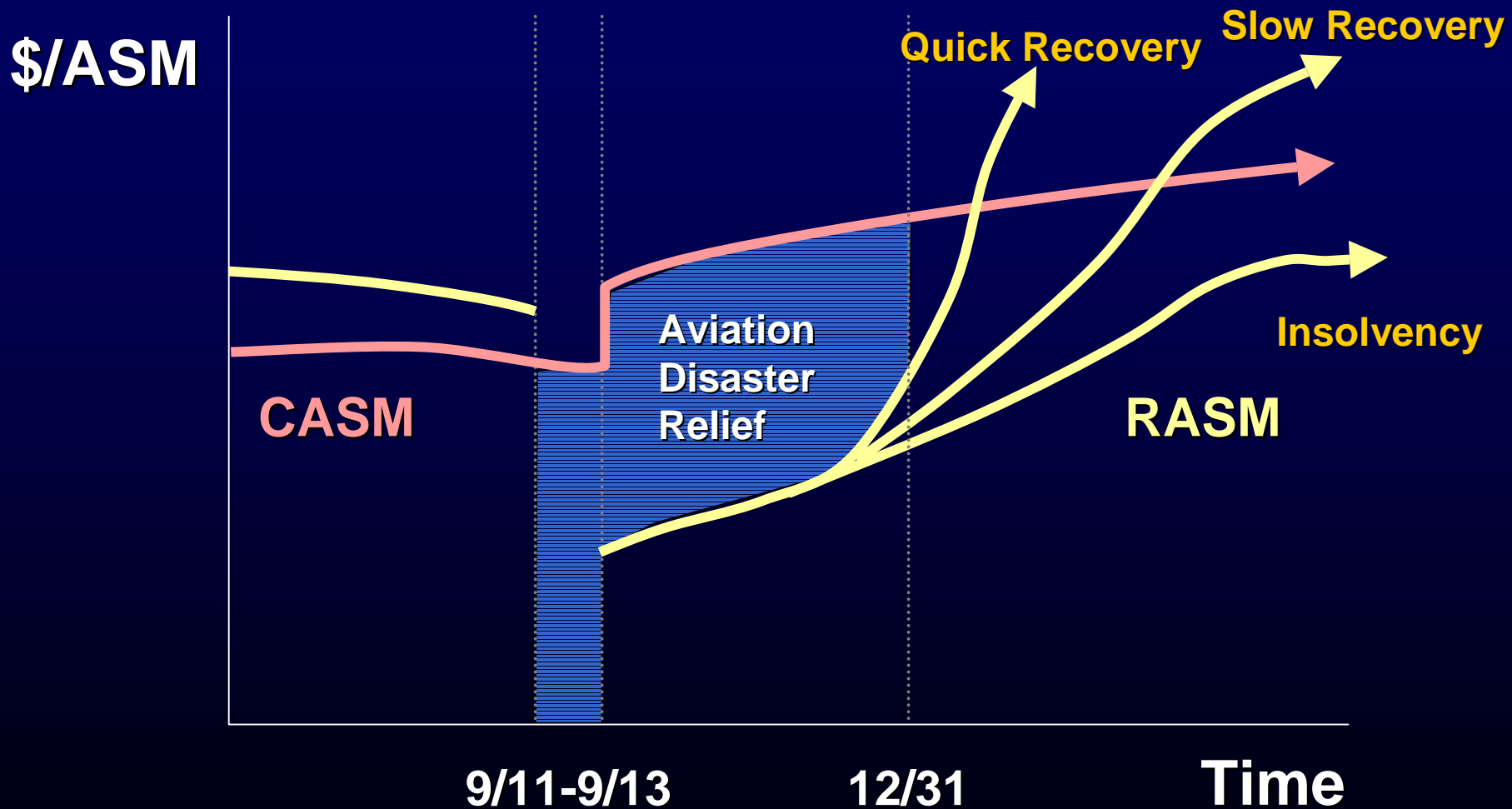
Source: Aviation Week & Space Technology 9/24/01, George Washington University Aviation Institute



Based on June 30 cash positions & daily cash operating expenses

Source: CNNfn, Merrill Lynch & Co

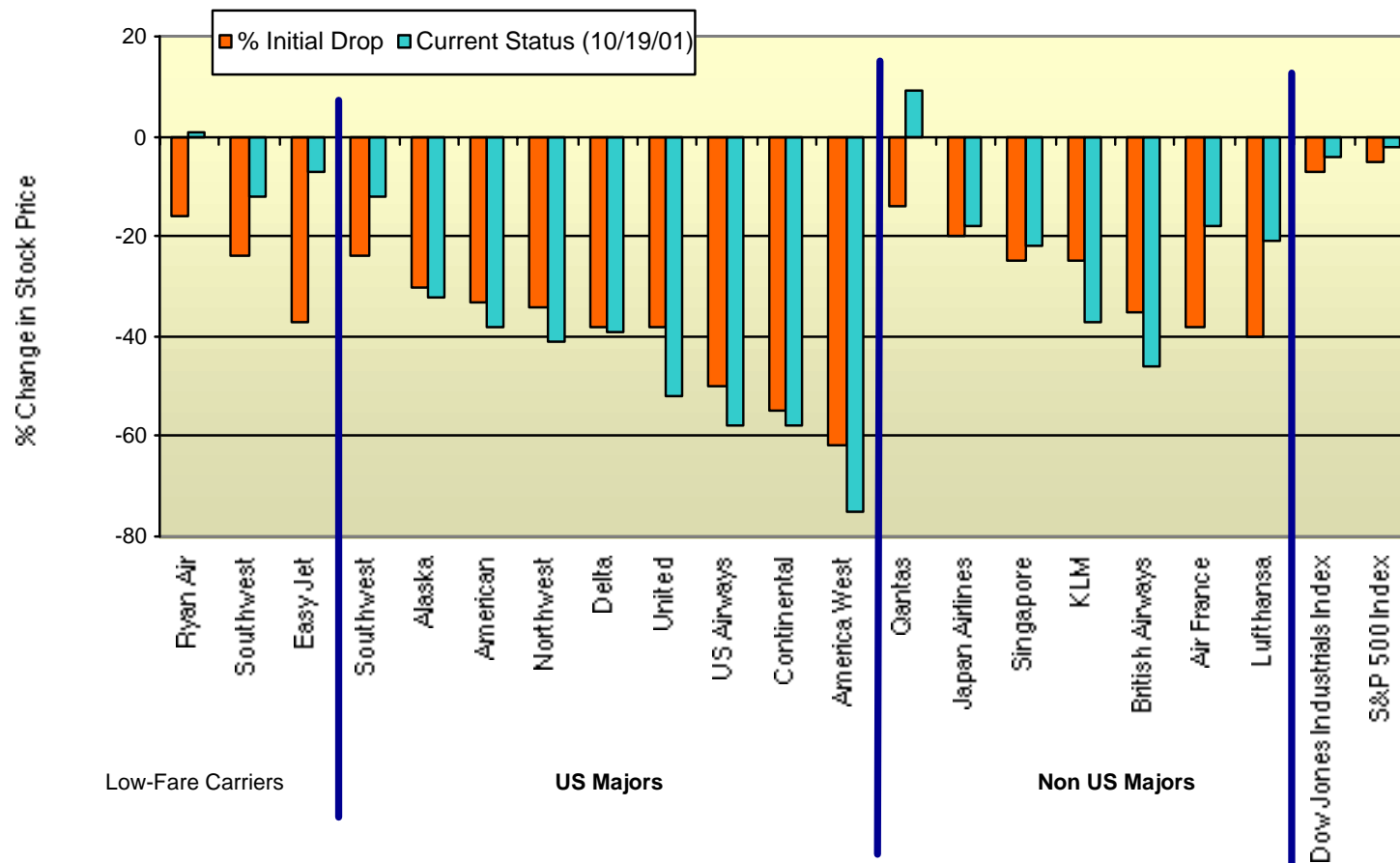
# Air Transportation Stabilization Act





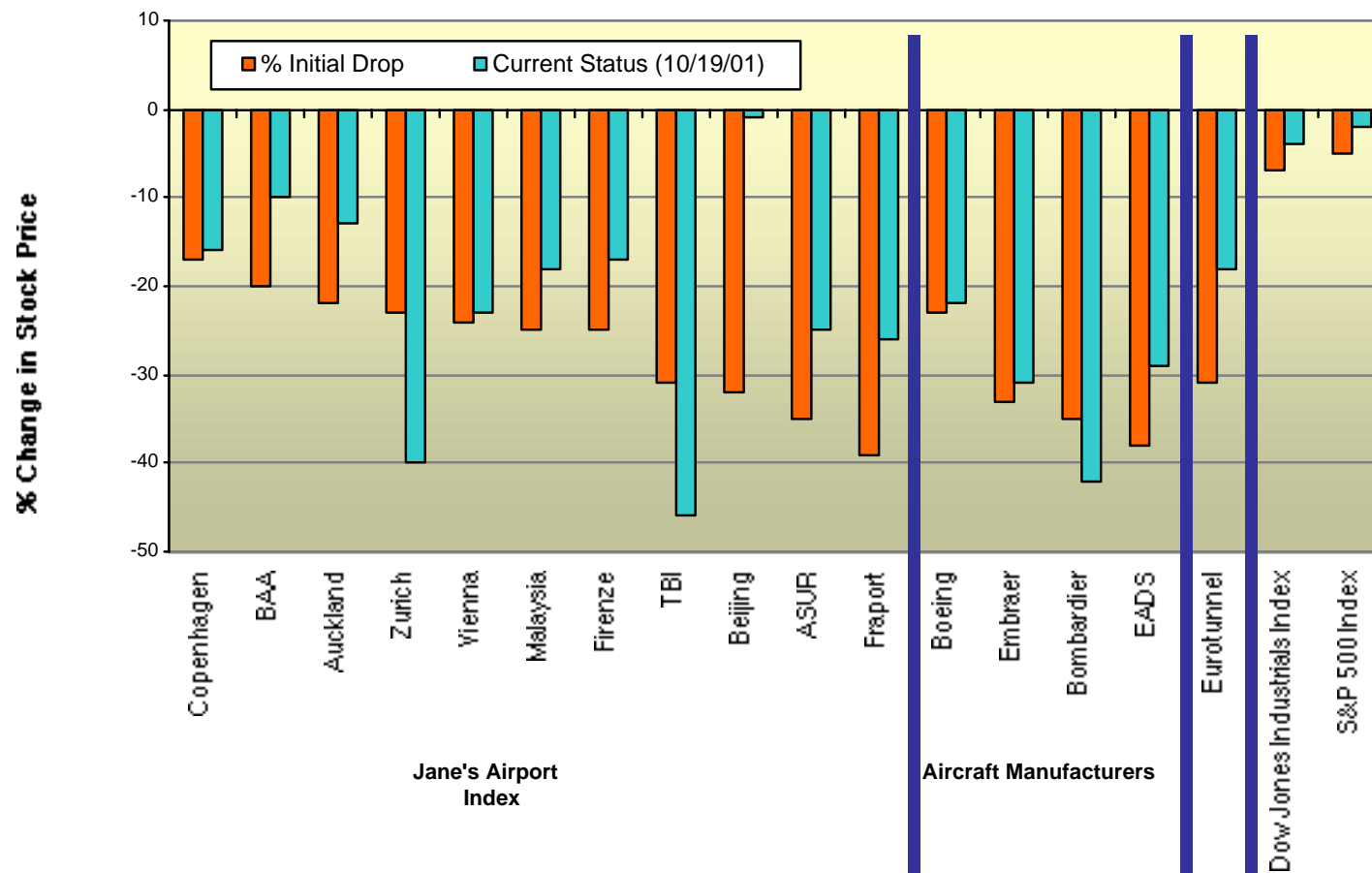
# Stock Market Reaction

(initial drop and 10/19/01 prices)



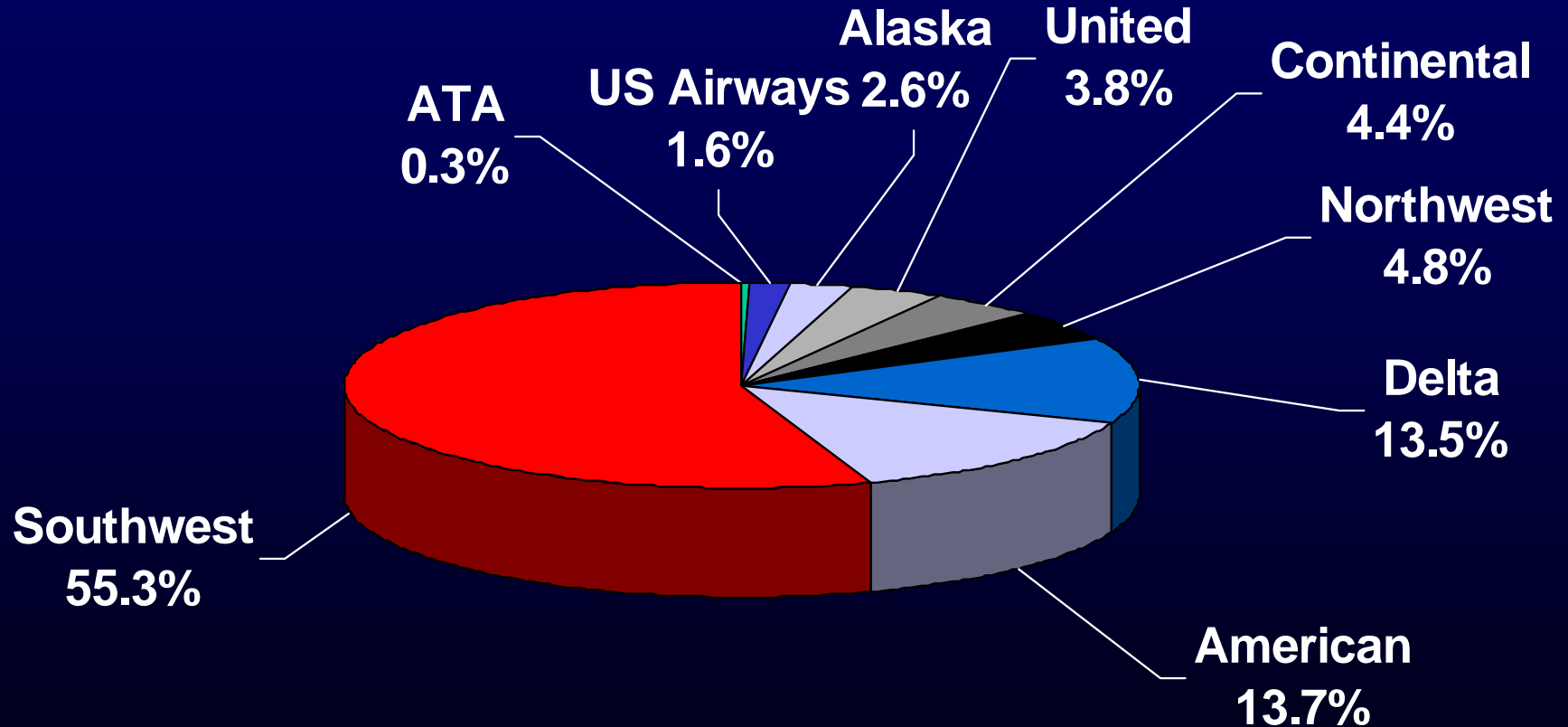
# Stock Market Reaction

(initial drop and 10/19/01 prices)



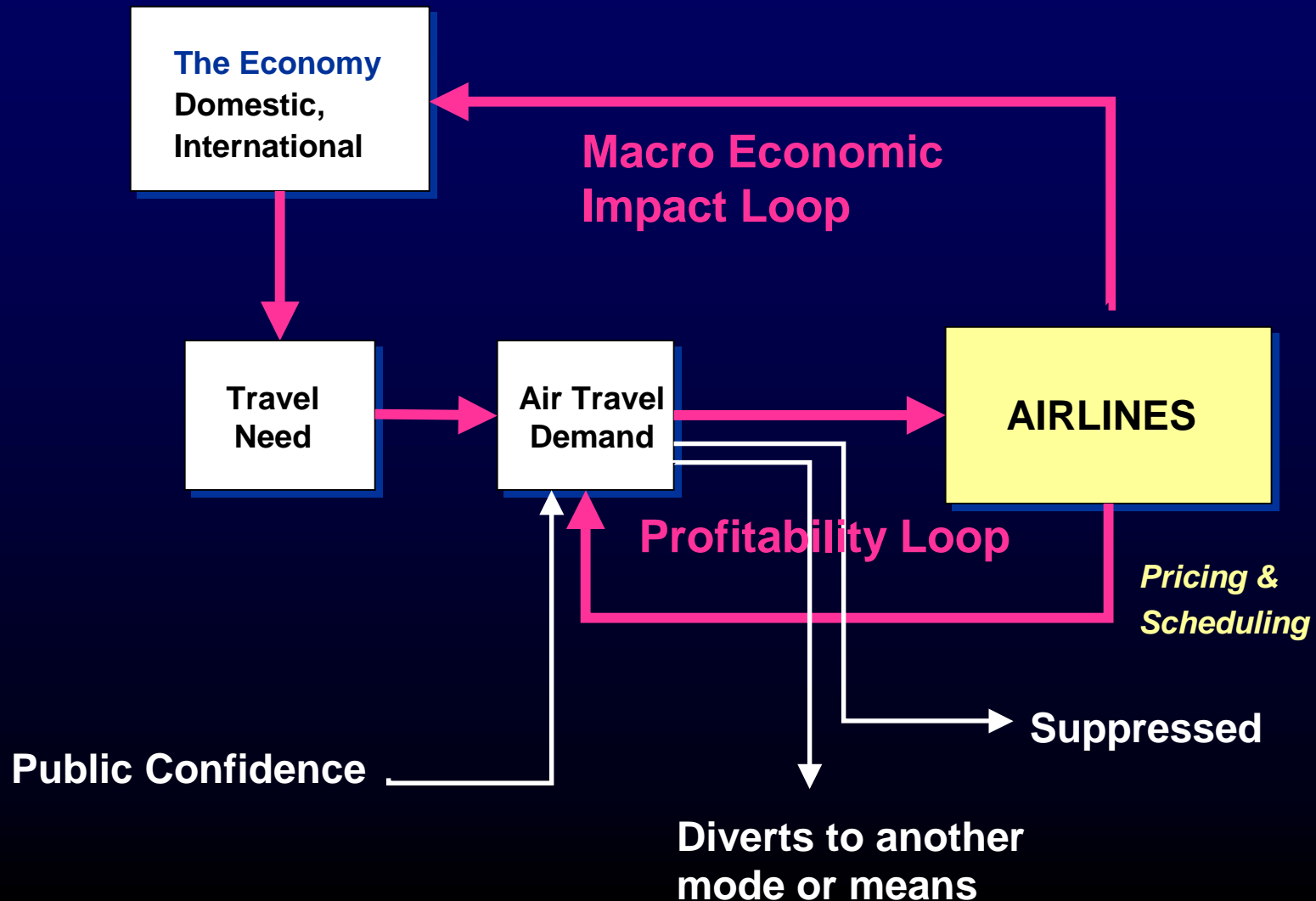
# Market Capitalization

(10/19/01 aprox)



**Total Market: \$20.8 billion**

# Macro Economic Effects

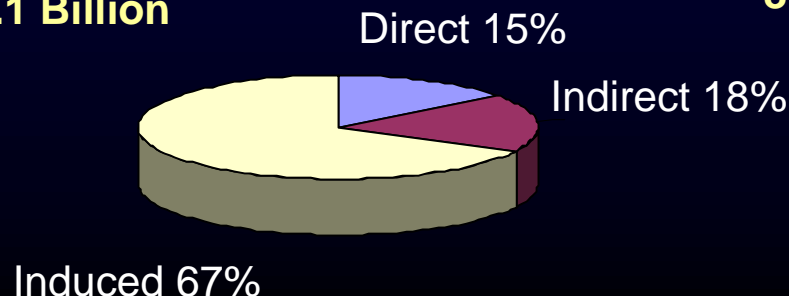


# Aviation's Macro Economic Impact

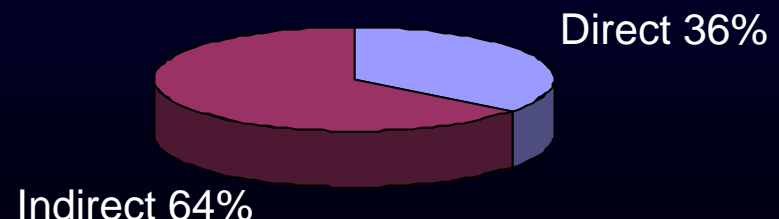
Air transportation has four types of effects:

- **DIRECT:** air carriers, airports, air navigation providers, etc
- **INDIRECT:** airline passengers and air freight forwarding business in other industries (hotels, rental cars, finance and banking, etc)
- **INDUCED:** expenses by the recipients of income generated by the direct and indirect economic activities
- **ENABLING:** provides access to markets and other activities that would not be possible without aviation

**Economic activity in the US (1993):**  
**\$771.1 Billion**



**Employment in the US (1993):**  
**8.84 Million jobs**



**Excludes enabling effect. Source: ICAO, FAA**

# Global Impact of Aviation

## (Direct Effects)

### Direct employment worldwide (1996):

- Airlines: 1.8 million
- Aerospace: 1.2 million
- Airports: 1.1 million

### Economic impact (revenues, 1996):

- Airlines: US\$ 325.2 billion
- Aerospace: US\$ 117.6 billion
- Airports: > US\$ 24 billion

### Support industries (1996):

- Civil jet fuel market: US\$ 42 billion
- Aircraft maintenance business: US\$ 10 billion, 65,000 jobs
- Catering business: US\$ 6.1 billion, 96,000 jobs
- CRS revenues: US\$ 4.4 billion, 19,000 jobs

# Keeping Some Perspective

|                      | <b>GNP<br/>1996</b><br>(const 1995 Billion US\$) | <b>GNP per capita<br/>1996</b><br>(const 1995 US\$) | <b>Population<br/>1996</b><br>(millions) |
|----------------------|--|---|--|
| <b>Honduras</b>      | 3.9  | 663   | 5.8                                      |
| <b>Namibia</b>       | 3.5  | 2,225   | 1.6                                      |
| <b>Singapore</b>     | 93.2   | 30,620  | 3.0                                      |
| <b>Turkey</b>        | 183.9  | 2,989   | 61.5                                     |
| <b>Japan</b>         | 5,455.5  | 43,380  | 125.8                                    |
| <b>United States</b> | 7,363.1  | 27,765  | 265.2                                    |
| <b>World</b>         | 29,617.9   | 5,164   | 5,736.0                                  |

*Source: World Bank*

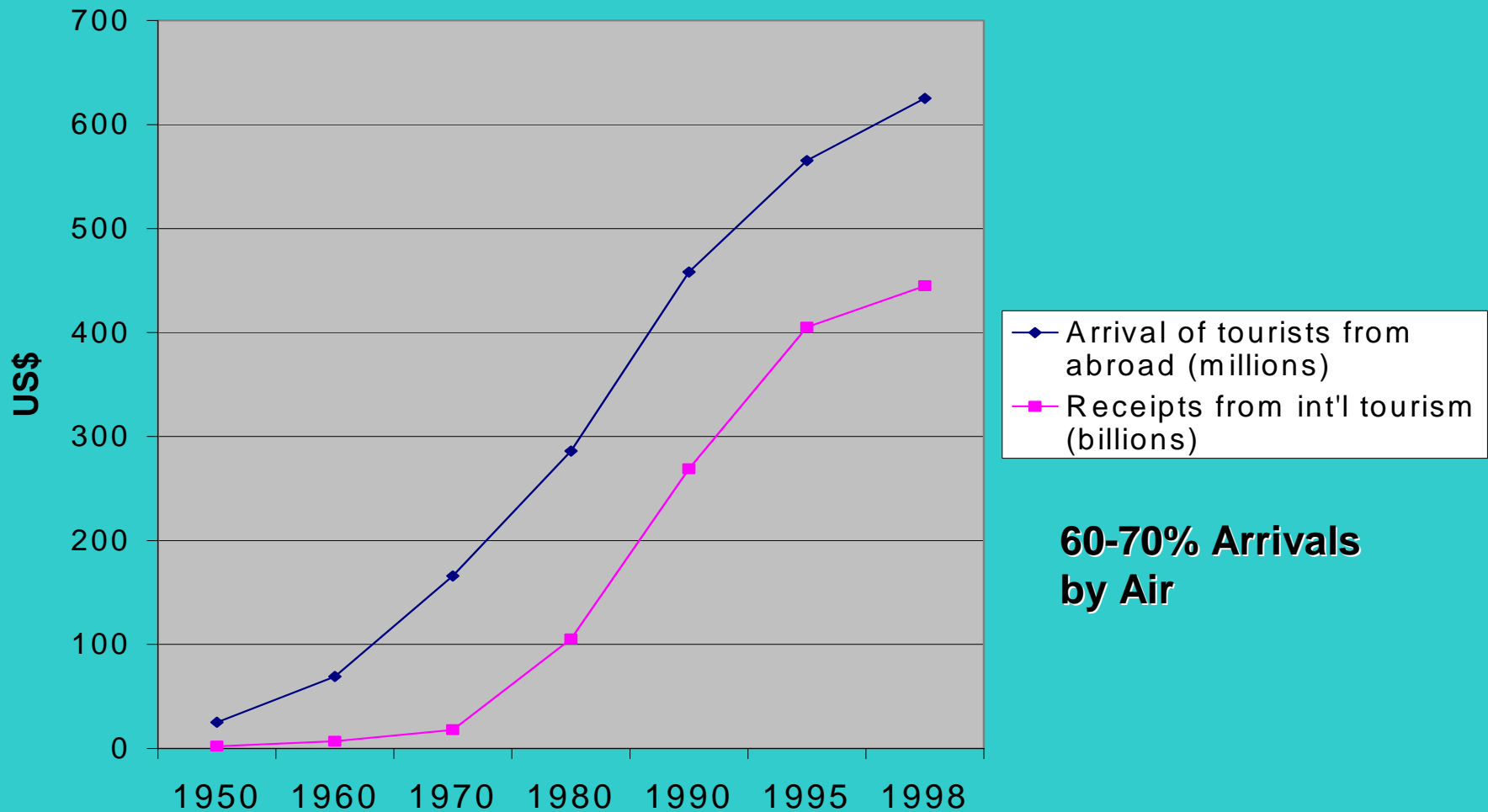
# Global Impact of Aviation

## (Enabling Effects)

- Scales
  - International
  - Domestic
  - Regional
- Paths
  - Access to Markets
    - Tourism
    - Industry
    - Services
  - Access to People
  - Access to Ideas
  - Access to Opportunity (e.g. capital)
- Social Enabling Effects (Literacy, Health,...)



# Example: World Tourism

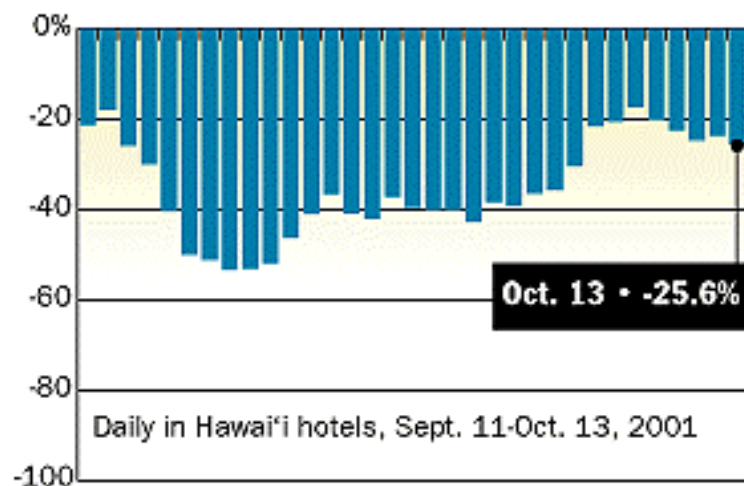


# Access to Market Example: Hawaii

- No alternative to air travel
- Public confidence goes down
- Direct impact on economy
  - 12,000 unemployment claims from 9/17-10/9, aprox 400% more than same period in 2000
- Gulf War: Hotels lost \$135 million during the first quarter of 1991
- Revenue has already fallen by \$143 million than a year ago

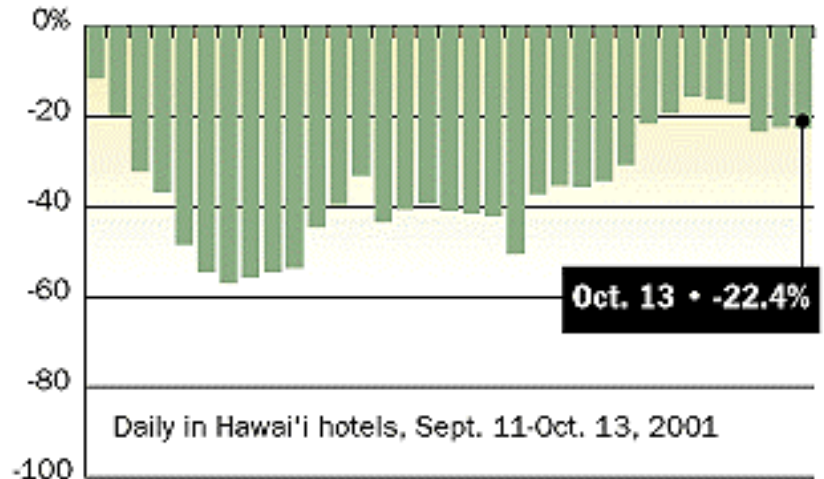
# Access to Market Example: Hawaii

**Hotel occupancy** (Change from 2000)



Source: Smith Travel Research/Hospitality Advisors LLC

**Revenue per available room** (Change from 2000)



The Honolulu Advertiser

# Discussion

- Profitability Loop
  - Restoration of confidence
    - Public
    - Market
  - Operating strategies
- Macro Economic Loop
  - Understanding critical to rational policymaking
  - Need help (data) documenting enabling effects
    - IAB Support
    - NASA, OAST, Commerce
    - Others?